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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,288	02/17/2004	Masayuki Ikeda	9319S-000631	7119
27572 7590 01/26/2007 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER MULL, FRED H	
			ART UNIT 3662	PAPER NUMBER
			MAIL DATE 01/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Interview Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/780,288	IKEDA, MASAYUKI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Fred H. Mull	3662	

All participants (applicant, applicant's representative, PTO personnel):

(1) Fred H. Mull. (3) \_\_\_\_\_

(2) Michael P. Doerr. (4) \_\_\_\_\_

Date of Interview: 24 January 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: \_\_\_\_\_

Claim(s) discussed: 1 and 2.

Identification of prior art discussed: \_\_\_\_\_

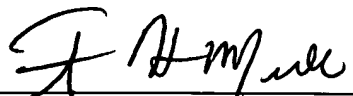
Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Discussed proposed amendment (see attachment). The independent claims incorporate the limitations from objected to dependent claims. The amended claims appear to distinguish over the prior art. An updated search will be performed upon receipt of a formal amendment.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
 Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



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DATE: January 23, 2007

NO. OF PAGES (INCLUDING THIS PAGE): 11

FOR: Examiner Fred Mull

COMPANY: USPTO - Art Unit 3662

FAX NO.: 571 273-6975

PHONE:

ORIGINAL WILL FOLLOW BY:

☐ REGULAR MAIL☐ OVERNIGHT MAIL☐ COURIER☒ WILL NOT FOLLOW

FROM: Michael P. Doerr - 248-641-1245

Please let us know by phone or fax if you do not receive any of these pages.

## COMMENTS:

Dear Examiner Mull:

Attached please find a proposed amendment for discussion purposes during our telephone conference tomorrow. For purposes of discussion, we can focus on claims 1 and 2. Please note that these claims include limitations previously appearing in claims 17/22, which were objected to in the last office action.

Thank you,  
Michael P. Doerr

## NOTICE

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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 10/780,288  
Filing Date: February 17, 2004  
Applicant: Masayuki IKEDA  
Group Art Unit: 3662  
Examiner: Fred H. Mull  
Title: POSITIONING SYSTEM  
Attorney Docket: 9319S-000631

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**FOR DISCUSSION PURPOSES ONLY**

**AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions and listings of claims in the application.

**LISTING OF CLAIMS**

1. (Currently Amended) A positioning system for determining a position of a positioning terminal, the system including a plurality of first signal sources each emitting a respective first signal, and one or more second signal sources each emitting a respective second signal, the first signals being synchronous with a reference time and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of the first signals, determining a distance from the positioning terminal, said positioning system comprising:

a measurement device for receiving the first signals from the first signal sources to determine a position P of the measurement device and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (TR), based on the reference time, of a predetermined event of the second signals;

a control device for determining a signal propagation time (t) between the measurement device and one of the second signal sources by calculating a relative distance |P-Q| between the measurement device and the one second signal source based on the position P measured by the measurement device and a position Q of the one second signal source and by dividing the resulting distance by the signal

propagation speed, and determining a time (TT), based on the reference time, at which the one second signal source originates the predetermined event by solving  $TR-t$ ;

the positioning terminal having a receiving device for receiving the signals from the first and second signal sources; and

a communication device for communicating between the control device and the positioning terminal,

wherein the positioning terminal uses the time TT to limit a search for the signals from the first signal sources, and uses the signals from the first signal sources for determining the position of the positioning terminal;

wherein the measurement device further comprises a mobile terminal in good conditions;

wherein the position P of the measurement device can be determined without accurate time information; and

wherein the measurement device measures P and TR and voluntarily reports the measured P and TR to the control device.

2. (Currently Amended) A positioning system for determining a position of a positioning terminal, the system including a plurality of first signal sources each emitting a respective first signal, and one or more second signal sources each emitting a respective second signal, the first signals being synchronous with a reference time and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of at least one of the first and second

signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device associated with each second signal source for receiving the first signals from the first signal sources to determine a position P of the measurement device and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (TR), based on the reference time, of a predetermining event of the second signals;

a control device for determining a signal propagation time (t) between the measurement device and its associated second signal source by calculating a relative distance  $|P-Q|$  between the measurement device and its associated second signal source based on the position P measured by the measurement device and a position Q of the second signal source and by dividing the resulting distance by the signal propagation speed, and for determining a time (TT), based on the reference time, at which the second signal source originates the predetermined event by solving  $TR-t$ ;

the positioning terminal having a receiving device for receiving the signals from the first and second signal sources; and

a communication device for communicating between the control device and the positioning terminal,

wherein the positioning terminal uses the time TT as a reference to receive to ~~limit a search for~~ the first signals and receives the first and second signals for determining the position of the positioning terminal;



wherein the measurement device further comprises a mobile terminal in good conditions;

wherein the position P of the measurement device can be determined without accurate time information; and

wherein the measurement device measures P and TR and voluntarily reports the measured P and TR to the control device.

3. (Original) The positioning system according to claim 1, wherein the first signal sources further comprise GPS satellites.

4. (Original) The positioning system according to claim 1, wherein the second signal sources further comprise base stations of a mobile communication network.

5. (Cancelled).

6. (Currently Amended) The positioning system according to claim 1, wherein the measurement device ~~further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and~~ measures P and TR according to a request from the control device in the same mobile communication network to report the measured P and TR to the control device.

7. (Original) A positioning system according to claim 1, wherein the second signal sources further comprise television broadcast stations.

8. (Original) The positioning system according to claim 2, wherein the first signal sources further comprise GPS satellites.

9. (Original) The positioning system according to claim 2, wherein the second signal sources further comprise base stations of a mobile communication network.

10. (Cancelled)

11. (Currently Amended) The positioning system according to claim 2, wherein ~~the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and TR according to a request from the control device in the same network to report the measured P and TR to the control device.~~

12. (Previously Presented) The positioning system according to claim 1, wherein the second signal sources further comprise television broadcast stations.

13. (Currently Amended) A positioning terminal for determining a position of the positioning terminal, the positioning terminal including a receiving device for receiving signals from a plurality of first signal sources each emitting a respective first signal and

one or more second signal sources each emitting a respective second signal, the first signals being synchronous with a reference time and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of the first signals, determining a distance from the positioning terminal, said positioning terminal comprising:

a calculation device for calculating  $TT = TR - |P - Q|/c$ ;

wherein the P is a position of a measurement device when the measurement device received the first signals from the first signal sources;

the Q is a position of the one second signal source;

the  $|P - Q|$  is a relative distance between the measurement device and the one second source;

the c is a signal propagation speed;

the TR is a receiving time, based on the reference time, when the measurement device received a predetermined event of the second signals at the position P;

wherein the positioning terminal uses the time TT to limit a search for the signals from the first signal sources, and uses the signals from the first signal sources for determining the position of the positioning terminal;

wherein the measurement device further comprises a mobile terminal in good conditions;

wherein the position P of the measurement device can be determined without accurate time information; and

wherein the measurement device measures P and TR and voluntarily reports the measured P and TR to a control device in the same mobile communication network.

14. (Currently Amended) A positioning terminal for determining a position of the positioning terminal, the positioning terminal including a receiving device for receiving signals from a plurality of first signal sources each emitting a respective first signal and one or more second signal sources each emitting a respective second signal, the first signals being synchronous with a reference time and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of at least one of the first and second sources so as to determine a position of the positioning terminal, said positioning terminal comprising:

a calculation device for calculating  $TT = TR - |P - Q|/c$ ;

wherein the P is a position of a measurement device when the measurement device received the first signals from the first signal sources;

the Q is a position of the one second signal source;

the  $|P - Q|$  is a relative distance between the measurement device and the one second source;

the c is a signal propagation speed;

the TR is a receiving time, based on the reference time, when the measurement device received a predetermined event of the second signals at the position P;

wherein the positioning terminal uses the time TT ~~to limit a search for~~ as a reference to receive the signals from the first signal sources and ~~[[.]] wherein the positioning terminal receives the first and second signals for determining the position of the positioning terminal;~~

wherein the measurement device further comprises a mobile terminal in good conditions;

wherein the position P of the measurement device can be determined without accurate time information;

wherein the measurement device measures P and TR and voluntarily reports the measured P and TR to a control device in the same mobile communication network.

15. (Previously Presented) The positioning terminal according to claim 13, wherein the first signal sources further comprise GPS satellites.

16. (Previously Presented) The positioning terminal according to claim 13, wherein the second signal sources further comprise base stations of a mobile communication network.

17. (Cancelled)

18. (Currently Amended) The positioning terminal according to claim 13, wherein the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and TR according to a request from the control device in the same mobile communication network to report the measured P and TR to the control device.

19. (Previously Presented) The positioning terminal according to claim 13, wherein the second signal sources further comprise television broadcast stations.

20. (Previously Presented) The positioning terminal according to claim 14, wherein the first signal sources further comprise GPS satellites.

21. (Previously Presented) The positioning terminal according to claim 14, wherein the second signal sources further comprise base stations of a mobile communication network.

22. (Cancelled)

23. (Currently Amended) The positioning terminal according to claim 14, wherein the measurement device ~~further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information,~~ and measures P and TR according to a request from the control device in the same network to report the measured P and TR to the control device.

24. (Previously Presented) The positioning terminal according to claim 13, wherein the second signal sources further comprise television broadcast stations.